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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,025	10/14/2005	Hironori Omura	2005_1035A	8860
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EXAMINER				
GOUGH, TIFFANY MAUREEN				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,025

Applicant(s)

OMURA ET AL.

Examiner

TIFFANY M. GOUGH

Art Unit

1657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/08)
Paper No(s)/Mail Date 6/22/2005, 2/8/2008, 10/14/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-14 in the reply filed on 2/8/2008 is acknowledged.

Claims 15-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

Claims 1-14 have been considered on the merits.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant's invention as claimed does not fall within the four categories of patent eligible subject matter as required by 35 U.S.C. 101. The claimed invention is drawn to a product of nature and is not directed to a practical application because the claims do not require any physical transformation, i.e. **a purified or isolated enzyme**.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Since the microorganism, *Aspergillus terreus* FERM BP-08578, is recited in the claims, it is essential to the invention recited in those claims. It must therefore be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. If the microorganism is not so obtainable or available, the requirements of 35 U.S.C. § 112 may be satisfied by a deposit of the microorganism. The specification does not disclose a repeatable process to obtain the microorganism and it is not apparent if the microorganism is readily available to the public.

It is noted that applicants have deposited the organism but there is no indication in the specification as to public availability.

If the deposit is made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants, or a statement by an attorney of record over his or her signature and registration number, stating that the specific strain will be irrevocably and without restriction or condition released to the public upon the issuance of a patent, would satisfy the deposit requirement made herein.

If the deposit has not been made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 C.F.R. §§ 1.801-1.809, applicants may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

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(a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;

(b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

(c) the deposit will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer; and

(d) the deposit will be replaced if it should ever become inviable.

Applicant is directed to 37 CFR § 1.807(b), which states:

(b) A viability statement for each deposit of a biological material defined in paragraph (a) of this section not made under the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure must be filed in the application and must contain:

- (1) The name and address of the depository;
- (2) The name and address of the depositor;
- (3) The date of deposit;
- (4) The identity of the deposit and the accession number given by the depository;
- (5) The date of the viability test;
- (6) The procedures used to obtain a sample if the test is not done by the depository; and
- (7) A statement that the deposit is capable of reproduction.

Applicant is also directed to 37 CFR § 1.809(d) which states:

(d) For each deposit made pursuant to these regulations, the specification shall contain:

- (1) The accession number for the deposit;
- (2) The date of the deposit;
- (3) A description of the deposited biological material sufficient to specifically identify it and to permit examination; and

(4) The name and address of the depository.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "substantially equivalent characteristics" in claim 10 is a relative term which renders the claim indefinite. The term "substantially equivalent " is not defined by

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the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,5-7,10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1176202.

Applicant claims a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid

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sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

EP'202 teaches a microorganism derived, i.e. *Acinetobacter*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose (0006,0009-0010,0012). The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose (0011). EP '202 teaches a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues (0012-0014, 0020-0022).

Thus, the reference anticipates the claimed subject matter.

Claims 1,5-7,10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001346587.

Applicant claims a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of

an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

JP'587 teaches a microorganism derived, i.e. *Acinetobacter*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose (0006-0009). The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose (0008). JP'587 teaches a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues (0007-0008,0015).

Thus, the reference anticipates the claimed subject matter.

Claims 1,5-7,10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Kratzsch (US 7132270).

Applicant claims a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of

an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

Kratzsch teach a microorganism derived, i.e. *Acinetobacter*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose (col.4, lines 20-47, col. 6, lines 45-55, col. 7, lines , 1-7,47-57). The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Kratzsch teach a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues (col.8, lines 7-67, col.9, col. 10, examples 1-5, Tables 1).

Thus, the reference anticipates the claimed subject matter.

Claims 1,5-7,10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sode (US 6103509).

Applicant claims a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble

coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

Sode teaches a microorganism derived, i.e. *E. coli*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose (col. 2, lines 15-52, Table 1). The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Sode teaches a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues (abstract, col. 2, lines 15-52, col.3 ,lines 1-57).

Thus, the reference anticipates the claimed subject matter.

Claims 1,4-7,11,12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bak (Biochimica Biophys. Acta, 1967).

Applicant claims a microorganism derived soluble coenzyme (flavin) binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a

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characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

Bak teaches a microorganism derived, i.e. *Aspergillus*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. Bak teaches a glucose dehydrogenase wherein the coenzyme is a flavin compound (abstract and p. 291, Discussion section).

Thus, the reference anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 5-7,10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1176202 or Kratzsch (US 7132270) or JP 2001346587 or Sode (US 6103509) in view of Dickinson et al (Biochem J. 1977, p. 237-244) and Pire (J. Molecular Catalysis, Enzymatic, 2000,p.409-417).

Applicant claims a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

The above references teach a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. They teach a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid

sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

Neither EP 1176202 or Kratzsch (US 7132270) or JP 2001346587 or Sode (US 6103509) teach using 1,10 phenanthroline as an inhibitor.

Dickinson teaches the inhibition of dehydrogenases by 1,10-phenanthroline at concentrations of about 2mM. They suggest that the inhibition is due to binding of reagent to the metal component or the binding of 1,10-phenanthroline to a hydrophobic region of the coenzyme-binding site (p. 239, second full paragraph, p.243, first full paragraph).

Pire teaches that glucose dehydrogenases contain tightly bound metal ions, nearly the same zinc content of alcohol dehydrogenases and are inactivated by metal chelators (see Pire, section 4.1, 4.2).

At the time of the claimed invention, it would have been obvious to one of ordinary skill in the art that a dehydrogenase such as glucose dehydrogenase would be inhibited by 1,10-phenanthroline given the suggested method of inhibition by Dickinson. Glucose dehydrogenases contain tightly bound metal ions, nearly the same zinc content of alcohol dehydrogenases and are inactivated by metal chelators (see Pire, section 4.1, 4.2). Therefore, given what is known in the art of the metal ions, coenzyme binding sites and inhibition by metal chelators, it would have been obvious to use 1,10-phenanthroline as an inhibitor.

Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to have used 1,10-phenanthroline with a reasonable

expectation for successfully inhibiting glucose dehydrogenase as it is a well known metal chelating agent and dehydrogenases are known to contain metal ions such as zinc.

Claims 1-9,11,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bak (Biochimica Biophys. Acta, 1967) in view of Dickinson et al (Biochem J. 1977, p. 237-244) and Pire (J. Molecular Catalysis, Enzymatic, 2000,p.409-417).

Applicant claims a microorganism derived, i.e. *Aspergillus*, soluble coenzyme (flavin) binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. The dehydrogenase oxidizes a hydroxyl group in the 1st position of glucose. Applicant also claims a glucose dehydrogenase which has a characteristics of or substantially equivalent to a microorganism derived soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose, which has an amino acid sequence containing a mutation, resulting from deletion, substitution, or addition of one or more amino acid residues.

Bak teaches a microorganism derived, i.e. *Aspergillus*, soluble coenzyme binding glucose dehydrogenase which oxidizes glucose in the presence of an electron acceptor and has a low activity to maltose. Bak teaches a glucose dehydrogenase wherein the coenzyme is a flavin compound (abstract and p. 291, Discussion section).

Bak does not teach using 1,10 phenanthroline as an inhibitor or *Aspergillus terreus*. However, Bak does teach *Aspergillus* therefore one of ordinary skill, without

evidence to the contrary, would expect *Aspergillus terreus* to have the "ability to produce" the dehydrogenase claimed.

Dickinson teaches the inhibition of dehydrogenases by 1,10-phenanthroline at concentrations of about 2mM. They suggest that the inhibition is due to binding of reagent to the metal component or the binding of 1,10-phenanthroline to a hydrophobic region of the coenzyme-binding site (p. 239, second full paragraph, p.243, first full paragraph).

Pire teaches that glucose dehydrogenases contain tightly bound metal ions, nearly the same zinc content of alcohol dehydrogenases and are inactivated by metal chelators (see Pire, section 4.1, 4.2).

At the time of the claimed invention, it would have been obvious to one of ordinary skill in the art that a dehydrogenase such as glucose dehydrogenase would be inhibited by 1,10-phenanthroline given the suggested method of inhibition by Dickinson. Glucose dehydrogenases contain tightly bound metal ions, nearly the same zinc content of alcohol dehydrogenases and are inactivated by metal chelators (see Pire, section 4.1, 4.2). Therefore, given what is known in the art of the metal ions, coenzyme binding sites and inhibition by metal chelators, it would have been obvious to use 1,10-phenanthroline as an inhibitor.

Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to have used 1,10-phenanthroline with a reasonable expectation for successfully inhibiting glucose dehydrogenase as it is a well known

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metal chelating agent and dehydrogenases are known to contain metal ions such as zinc.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,4,5,10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 18,19, 21,22,27,28,35,37,38 of copending Application No. 11/886885. Although the conflicting claims are not identical, they are not patentably distinct from each other because the applications are drawn to a coenzyme-binding dehydrogenase regardless of its origin or method of making.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIFFANY M. GOUGH whose telephone number is (571)272-0697. The examiner can normally be reached on M-F 8-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tiffany M Gough/
Examiner, Art Unit 1657

/Ruth A. Davis/
Primary Examiner, Art Unit 1651